5766

CSSE

The Consortium of Selective Schools in Essex

MATHEMATICS PAPER FOR 2019 ENTRY – TEST 2

Name: _____

Candidate Number: _____

Primary School: _____

Boy or Girl: _____

Date of Birth: _____

Today's Date: _____

Test Taken At: _____

READ THE FOLLOWING CAREFULLY:

1. **Do not open this booklet until you are told to do so.**
2. You may work the questions out in your head, or by writing on the white area around the question.
3. **Work as quickly and as carefully as you can.**
4. Make any alterations to your answers **clearly.** You will not lose marks for crossing out.
5. You will have **60 minutes** to do the test. If you find you cannot do a question, **do not waste time on it but go on to the next one.**
6. **Once the test has begun, you should not ask about questions in the test.**
7. **The use of electronic calculators of any description (including calculator watches) is NOT permitted.**

NOT TO BE FILLED IN BY PUPIL		
PAGE	SCORE	
	R	W
1 (6)		
2 (6)		
3 (6)		
4 (6)		
5 (6)		
6 (5)		
7 (4)		
8 (6)		
9 (3)		
10 (4)		
11 (4)		
12 (4)		
TOTAL (60)		
INITIALS OF MARKER(S)		

You have sixty minutes to complete this paper.
Do your working out in the spaces on the paper.

Question (and working space)	ANSWER	Please do not write in this space
1 (a) Calculate $1047 + 76 =$		
(b) Calculate $2318 - 842 =$		
(c) Calculate $371 \div 7 =$		
2 (a) Calculate the value of $3\frac{2}{3} + 1\frac{3}{4} =$		
(b) Calculate the value of $\frac{7}{8} - \frac{2}{5} =$		
(c) Fill in the empty box to make the calculation work. $\square \div \frac{1}{4} = 10$		

R
W
(6)

Question (and working space)	ANSWER	Please do not write in this space
3 (a) Calculate $31 \times (76 - 59) =$		
(b) Calculate $21 \div 8 =$ Giving your answer as a decimal		
(c) Calculate the value of $\frac{13}{6} - \frac{7}{12}$		
4 (a) How many millimetres are there in 26.81cm?		
(b) Rectangular carpet tiles measure 20cm by 30cm. Calculate the area of a tile in m^2	.....m^2	
(c) What is the total area of 2500 rectangular carpet tiles which each measure 20cm by 30cm? Give your answer in m^2	.....m^2	(6)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space

5 Sean is completing a table of values for the formula **4n-3**.

n	*4n–3*
2	5
12	
	81

Complete the table with the two missing values.

(a) What is the smallest value of **n** which means that Sean gets a formula value above 200?

n = ...

(b) Alexia decides to complete a table of values for the formula $\mathbf{n^2 + 1}$.

Sean and Alexia each calculate their values for when **n** is 11.
What is the difference between their values?

6 This question is about the following numbers:

0.035 0.305 $\frac{1}{4}$ $\frac{1}{3}$ 0.0298 $\frac{1}{5}$

(a) Which is the smallest number in the list?

(b) Which is the largest number in the list?

R
W
(6)

Question (and working space)	ANSWER	Please do not write in this space
7 A number 'A' times 1000 is 3550 and a number 'B' times 10000 is 6200.		
(a) What is the value of A + B?	A+B = ...	
(b) What is the value of 0.5A – 2B?	0.5A-2B = ...	
8 This question involves 'powers'. Fill in the blank squares to complete the calculations correctly.		
(a) $\square^{\boxed{4}} = 16$		
(b) $\boxed{3}^{\square} = 243$		
9 (a) A pupil takes a test which has a total of 60 marks. When she gets her result, the pupil calculates that she has got 85% on the test. How many marks out of 60 did she get?		
(b) In a shop a T-shirt costs £5. If the shop keeper puts up the price of everything by 15%, what will the T-shirt cost?		R W (6)

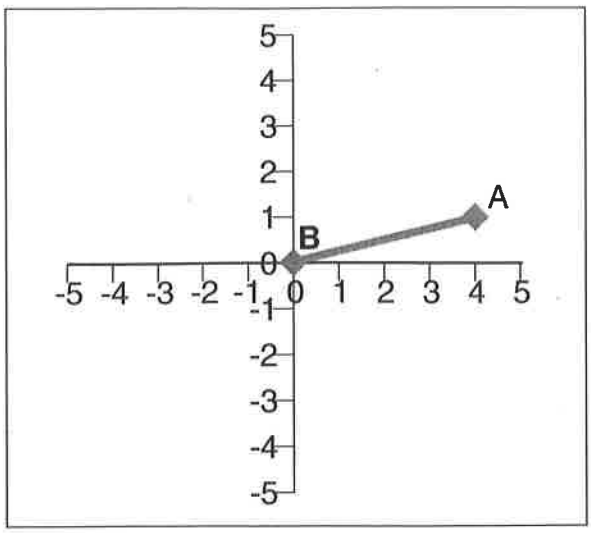
Question (and working space)	ANSWER	Please do not write in this space
10 (a) The gaps in this sequence increase by 1 each time: 4 6 9 13 18 What is the 8th number in the sequence?		
(b) Fill in the blank square so that the gaps in this sequence reduce by 2 each time: 14 ☐ 32 38		
(c) The gaps in this sequence increase by 2 each time: b c d 31 46 Find the value of b Find the value of c – b	b = ... c – b = ...	
11 A recipe for the dough for cheese scones is: 200g of self-raising flour 150g of butter 100g of cheddar cheese 150g of milk		
(a) Michael wants to make scones and calculates that he needs 3kg of dough. If he keeps to the same proportions, how much butter does he need to use?	.....g	
(b) Janina has 750g of cheddar cheese and wants to use all of it to make cheese scones. How much milk does she need to use?	.....g	R W (6)

Question (and working space)	ANSWER	Please do not write in this space
12 In imperial measures, there are 12 inches in a foot and 3 feet in a yard.		
(a) What is the difference in inches, between a length of five and a half yards and a length of twenty-one and a quarter feet?	.....inches	
(b) If a mile equals 1760 yards, how many feet are there in one and a half miles?	.....feet	
13 A whole number B gets rounded to the nearest 10 to give 830. A whole number C gets rounded to the nearest 100 to give 1200.		
(a) What is the largest possible value of C?		
(b) What is the smallest possible value of B + C?		
(c) What is the smallest possible value of C – B?		

R
W
(5)

Question (and working space)	ANSWER	Please do not write in this space

14 The point B has coordinates (0,0) and the point A has coordinates (4,1).



The line from B to A is one side of a square. What are the two possible coordinates of the corner of the square diagonally opposite B?

(,)

(,)

15 In a test out of 10, a group of pupils scored these marks:

6, 7, 9, 5, 4, 10, 8.

(a) What was the average (mean) mark?

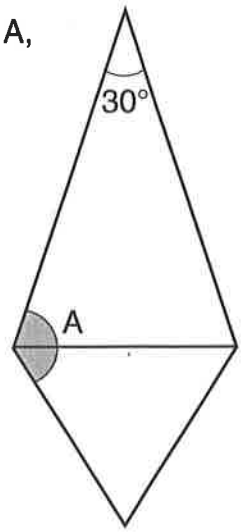
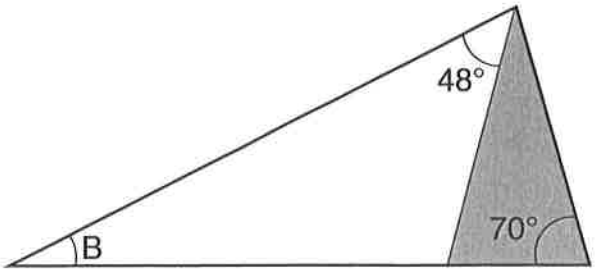
(b) In a different test, a teacher calculated that a group of 12 pupils had scored an average of 24 marks (out of 30) on a test. However, the teacher had incorrectly marked one pupil's test, giving him 13 out of 30 when he really should have got 19 out of 30. What should the correct average be?

R
W

(4)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space
16 The area of one side of a cube is $25cm^2$. A second cube has sides which are twice the length of the first cube.		
(a) Find the area of one side of the second cube.	Area = ...cm^2	
(b) Find the volume of the second cube.	Volume = ...cm^3	
17 For these statements say whether they are **always** true, **sometimes** true or **never** true.		
(a) The difference between two square numbers is even.	..... true	
(b) The difference between two prime numbers is even.	..... true	
(c) The difference between the squares of two 3 digit odd numbers is even.	..... true	
(d) When you multiply two different prime numbers together, the result is divisible by nine.	..... true	R W (6)

Question (and working space)	ANSWER	Please do not write in this space
18 Cara is swimming lengths in her local pool. After swimming some lengths she has done one fifth of her target. After another two lengths she has done a quarter of her target. What is her target number of lengths?		
19 (a) An isosceles triangle is joined onto an equilateral triangle as follows: Find the size of the shaded angle marked A, in degrees. 	A = ...	
(b) A triangle is made by joining a different isosceles triangle onto a triangle with three different length sides as follows (the isosceles triangle is shaded grey): Find the size of the angle marked B, in degrees. 	B = ...	R W (3)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space

20 This is part of the train timetable between London and Penzance.

London	12:03
Reading	12:33
Exeter	14:07
Newton Abbot	14:29
Plymouth	15:04
Truro	16:24
Penzance	

(a) How long, **in minutes**, does it take to travel from Exeter to Truro?

(b) London to Exeter is 40% of the total journey time from London to Penzance. When does the train reach Penzance?

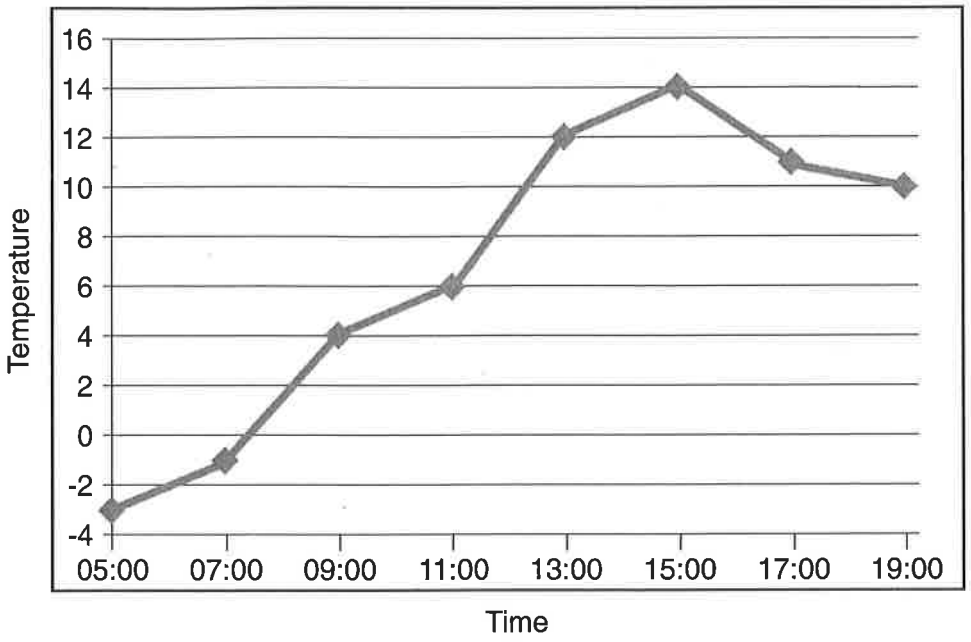
(c) When there are speed restrictions, the journey times are all doubled. If a train leaves Reading at 13:03 and travels under a speed restriction, when will it reach Newton Abbot?

(d) When is the latest time a train can leave London and still reach Plymouth by 22:00 if there is a speed restriction?

R
W
(4)

Question (and working space)	ANSWER	Please do not write in this space

21 The chart shows the temperature in degrees Celsius at different times of a certain day in Birmingham.



(a) What is the temperature at 11:00?

(b) By how much has the temperature risen between 05:00 and 13:00?

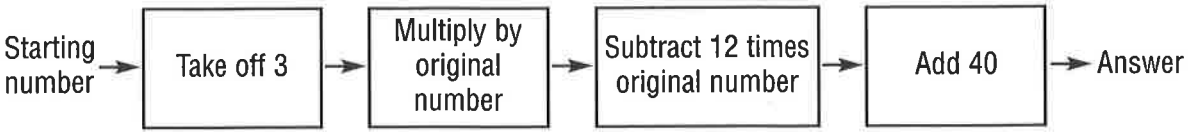
(c) Between what times is the temperature rising fastest?

(d) To convert a temperature in Celsius to a temperature in Fahrenheit, you have to multiply by 1.8 and then add 32. What is the temperature at 15:00 in Fahrenheit?

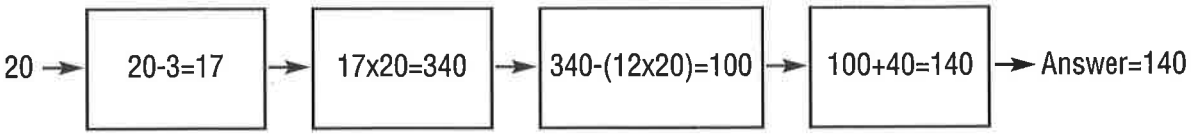
R
W
(4)

Question (and working space)	ANSWER	Please do not write in this space

22 A mathematician invents a formula machine as follows:



So, if the starting number is 20, the process goes like this:



(a) What answer do you get from a starting number of 23?

Answer

.....

(b) What starting number could give you an answer of 40?

Starting number

.....

23 At the supermarket three oranges and five apples cost £2.05.
At the corner store where oranges cost the same, but apples are 50% more expensive, three oranges and five apples cost £2.55.
Find the price of an orange and the price of an apple in the supermarket.

One orange costs

.....pence

One apple costs

.....pence

END OF TEST (You should have completed 23 questions.)

R
W
(4)

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The Consortium of Selective Schools in Essex

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